Richard Kha

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in Richard Kha | Richard32

Toronto, Ontario, Canada

EDUCATION

University of Toronto

September 2021 - August 2025

B.Sc. in Computer Science (Honours), focus in Artificial Intelligence

Toronto, Canada

o GPA: 3.95/4.00

Relevant coursework: Data Structures & Analysis, Algorithm design & Analysis, Operating Systems,
Introduction to Databases, Introduction to Machine Learning, Introduction to Image Understanding,
Knowledge Representation & Reasoning, Neural Networks & Deep Learning, Capstone Design Project

EXPERIENCE

Optimizing remote JIT compilation for the JVM

May 2024 - August 2024

Undergraduate researcher

- Developed benchmarking tools to measure the speed of the JITServer
- Implemented scheduling algorithms in C++ in order to improve the performance of the JITServer
- Created a scheduling algorithm which reduces client runtime by up to 9% in high load senarios
- Co-wrote the paper on our findings and performed an oral presentation at HotInfra '24
- Done in collaboration with IBM CAS

• Automating Data Analysis for Enhancing ASD Therapy Sessions

September 2024 - December 2024

Undergraduate researcher

- Implemented a diarization model from a recent paper in order to improve diarization accuracy
- Conducted tests on diarization models in order to determine change in diarization quality
- Created an improved version of the diarization model with increased accuracy in the child-adult speech scenario
- Implemented an algorithm to create transcriptions with speaker labels more accurately given imperfect diarization and transcription
- Wrote a brief report on our findings

PUBLICATIONS

[1] R. Kha, N. Sreekumar, A. Khrabrov, E. de Lara, A. Brown, M. Gabel, M. Pirvu. (2024). **Towards Optimal Remote JIT Compilation Scheduling for the JVM**. 2nd Workshop on Hot Topics in System Infrastructure (HotInfra 2024) held in conjunction with SOSP 2024. November 2024.

SKILLS

- **Programming Languages:** Java, Python, C/C++, JavaScript, React.js
- Database Systems: PostgreSQL
- Data Science & Machine Learning: Pytorch, Scikit-learn, NVIDIA Triton Inference Server, Deep neural networks
- Cloud Technologies: Google Cloud Platform, Docker
- Version Control: Git, GitHub
- Other: Linux, Data Structures & Algorithms

Koko: [A social app for seniors]

Tools: [Java spring boot, React native, Firebase, WebRTC, Google Oauth]

July 2025 - Present

[https://kokosocial.ca/]

- Developed an android app to support social communication within older adult communities with a strong focus on accessibility
- Full stack development; implemented both the front end mobile app and the java resource server for the app
- Created messaging, video calling services, user creation services, and matchmaking services
- Implemented a voice navigation feature for ease of use within the app

Bumblebench for JITserver benchmarking: [Tools for JITServer benchmarking]

May 2024 - September 2024

Tools: [Python, Java, Docker, JSON]

- Developed scripts in order to run benchmarks on a JITServer (disaggregated JIT compiler) under high load
- Used Docker to containerize and limit the JITServer
- Used JSON files to create configurations for the JITServer
- Developed scripts in order to produce graphs to analyze performance of the JITServer

• Capital City: [A monopoly clone]

October 2022 - December 2022, July 2023 - October 2023

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Tools: [Java, Java Swing, Gradle]

- Developed a clone of monopoly
- o Implemented graphics, sound, game play, etc.
- o Implemented multiplayer via sockets and a server
- Implemented concurrency mechanisms
- Implemented persistance mechanisms

• Crazy Minigames: [A rhythm game and fighting game application] Tools: [Java, JavaFX]

March 2021 - July 2021, May 2023 - June 2023

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• Developed a fighting game and rhythm game in a single application

• Implemented graphics, sound, game play, etc.

• Custom Tetris: [A modern tetris clone]

January 2020 - February 2020, February 2024 - February 2024

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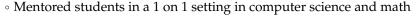
Tools: [Java, JavaFX] • Created a clone of Tetris which implements modern Tetris gameplay features

• Implemented graphics, sound, game play, etc.

VOLUNTEER EXPERIENCE

 Coding/Math Tutor August 2021 - Present

YDC - Youth Dream Canada



• Developed skills in teaching others more effectively and clearly

Rcognized Study Group Leader

September 2022 - December 2022

University of Toronto

- Set up meetings and coordinated a study group for MAT237 (Multivariable Calculus with Proofs)
- Developed stronger presentation and communication skills

HONORS AND AWARDS

Undergraduate Student Research Award (USRA)

May 2024 - September 2024

Natural Sciences and Engineering Research Council of Canada (NSERC) Award to support summer research done in 2024

• The Friends of Victoria University Library Scholarship

University of Toronto

September 2023

· Awarded to students who achieved overall A standing in second year

Margaret Slater Scholarship from the Senate of Victoria University

University of Toronto

September 2022

· Awarded to students who achieved overall A standing in first year

· University of Toronto Scholars Award

University of Toronto

Awarded to outstanding secondary school students on admission

September 2021

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